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framed in the simplest language ; the glossary itself contains but sixty-one terms, and among these are included such common words as annual, head, herb, and stamens. About four hundred flowers and one hundred fruits are thus simply described in detail sufficient for identification. Provisions are made for those least learned in botanical terms, and it is possible to trace the flowering dogwood successfully, even if the four large white bracts are considered petals — as they often are by the uninitiated. Sometimes it seems as if this simplified method were carried to the extreme ; the flowering dogwood may again be mentioned here, for the keys do not make it possible to find the name if one uses the true flowers, which are surrounded by these white bracts. Objections might also be made to the use of the word sepals for all the perianth parts of some of the Liliaceae. The illustrations add but little to the value of the book, and some (such as the line drawings of the yellow clover, pine sap, and hobblebush) may prove a hindrance.

Yet, these are after all minor points. The book is by far the easiest, simplest, and quickest guide to wild flowers. It is so simple that a child of twelve can readily learn to use the keys and name the common flowers of his neighborhood. The book must also prove a boon to the many people who are interested in plants and their names, but who do not have the time and the patience to work over the somewhat technical keys of our manuals of botany, and to whom simple and compound pistils, placentae, and hypogynous or inferior insertions are insurmountable difficulties. High school pupils should be introduced to this popular key, for it may prove the long-desired connection between the work of the school room and a lasting interest in botany.

JEAN BROADHURST.

PROCEEDINGS OF THE CLUB

MAY 26, 1909

This meeting was held at the museum of the New York Botanical Garden and was called to order at 3 : 30 P. M. by President Rusby. Thirty-four persons were present. After the reading and approval of the minutes of the preceding meeting,

the scientific program was presented, the first contribution being made by the president, Dr. H. H. Rusby, who spoke on "The Earliest Spring Flowers in the Vicinity of Charleston, South Carolina."

The speaker's remarks were based on observations made between March 16 and March 23 at Summerville, which is about twenty-two miles northwest of Charleston. This town is located upon a ridge, said to be of limestone and elevated only a few feet above the surrounding flats. Most of the country about is covered with pine timber, but there are numerous low swampy places filled with dense thickets formed of various trees, shrubs, and vines. There is also considerable deciduous forest growth intermingled with the pines. By a careful comparison of the state of vegetation there in March with that of New York and vicinity in May, it was concluded that there was a difference of eight or nine weeks this year in the progress of the season, though it is probable that in an ordinary year the difference would be about seven or eight weeks.

Summerville is noted for the existence there of Dr. Shepard's tea-gardens, the only tea plantation conducted on a commercial scale in this country. There are now about 100 acres of plantation in productive operation there, from which 12,000 to 15,000 pounds of tea are sold annually. Success has been obtained through an extensive series of experiments with all the known varieties of the tea plant. No attempt is made to compete with the Orient in the cheaper grades of tea but in the more highly prized grades, the Summerville product is already taking a leading rank.

The plants collected were discussed and exhibited in groups, the first comprising the earliest-flowering kinds. The yellow jessamine (*Gelsemium*) was everywhere abundant, forming thickets difficult of penetration and loading the air with fragrance. Growing with it were several species of *Smilax*, then sending up their young crisp shoots, which are there known as "wild asparagus" and are said to be used as a substitute for that vegetable. They have large tuberous rhizomes, collectively known as "bamboo brier." Some of the more fleshy starchy kinds of these tuberous

rootstocks were used as food by the Indians. One of the early-flowering plants was a bloodroot, segregated by Professor Greene from its northern ally as *Sanguinaria australis*. *Hexastylis arifolia* was rather common on sandy slopes. The close-creeping *Rubus trivialis* grows everywhere along the roadsides, with its handsome large flowers scarcely elevated above the low grass. Two strikingly different *Houstonias* occur, *H. minor*, which closely resembles *H. caerulea*, and *H. rotundifolia*, which has the habit of *Veronica officinalis*. *Thyrsanthema semiflosculare* (*Chaptalia tomentosa*) was of peculiar interest to the speaker on account of its resemblance to related species which he had collected in tropical America. *Pinguicula lutea* is common on partly shaded wet sand. In similar, though drier places, grew the yellow-flowered *Chrysogonum virginianum*.

The second group of plants discussed included those inhabiting low sandy grounds which are perhaps technically swamps, though usually dry. The most interesting of these plants is the at length climbing and extremely variable *Viorna crispa*, with its beautiful nearly white or light blue somewhat fragrant flowers. Several handsome shrubs are found in this association and also an *Oxalis*, which is apparently *O. Martiana*.

The aquatic and semi-aquatic plants observed included, in part, *Ranunculus hispidus*, *Senecio lobatus*, *Callitriche heterophylla*, *Cardamine pennsylvanica*, and *Sarracenia flava*. The last is abundant in open grassy swamps and gives them a yellow hue when in full bloom.

The shrubs and trees of the region included *Malus coronaria*, always growing singly in swamps, *Amelanchier Botryapium*, *Aronia arbutifolia*, *Ilex glabra*, *Ilex decidua*, and a great abundance of *Myrica cerifera* of very large size. *Viburnum obovatum*, often seen near streams, is known locally as the "possum haw." *Viburnum cassinoides* and *Azalea canescens* were also observed. *Symplocos tinctoria* is very different in habit from the tropical representatives of the genus. A very handsome juniper, of low, broad, cypress-like habit, is perhaps *Juniperus barbadensis*. Doubtless the two most elegant shrubs of the swamps were *Leucothoe axillaris* and *Pieris nitida*, both of which grow in dense clumps,

and have dark heavy foliage and an abundance of waxy white flowers. *Vaccinium australe* takes the place there of our *V. corymbosum* and closely resembles that species. Another species, probably *V. tenellum*, was in flower at the time, as were two species of *Prunus*.

Other plants collected were *Silene caroliniana*, *Podophyllum peltatum*, *Linaria canadensis*, and a peculiar and abundant *Trillium*, which is possibly *T. ludovicianum*, though far out of its recorded range, if really belonging with this species.

Dr. Britton, in discussing Dr. Rusby's paper, referred to the popular belief among the fruit-growers of Delaware that the spring advances northward at the rate of thirteen miles a day — a belief that would seem to be supported by Dr. Rusby's observation that there is a difference of seven or eight weeks in the progress of the season between Summerville and New York City.

The second paper on the scientific program was by Dr. J. A. Shafer on "Botanizing in Cuba." The following summary is from an abstract prepared by Dr. Shafer :

"I was landed from a New York steamer at Nuevitas on January 22, and arrived at La Gloria, my first headquarters, late the following evening.

"A chain of islands extends along the north coast of Cuba, from Nuevitas to Cardenas, separated from the mainland by a series of bays and channels forming an inner passage for small sailing craft. Through some sixty-five miles of this one passes mangrove-fringed shores before reaching Port Biaro.

"La Gloria, one of the oldest and most prosperous of the American colonies, is situated four and one-half miles inland from the port above mentioned, across a low palmetto-covered savanna. The village with its surrounding citrus plantations, is situated in a dense, mostly primeval forest composed of a great variety of tropical trees, their tops bound together with many kinds of woody vines and supporting on their trunks and branches many orchids, of which some fifteen or eighteen species were collected — also bromeliads in great numbers and of several varieties; two cactuses are ever present, a creeping snake-like night-blooming *Cereus* and the graceful pendent *Rhipsalis*, called

by the colonists "mistletoe." Undershrubs and ferns are few in number and variety, and herbaceous plants are scarce. This wooded region, of very low altitude, here extends about one-fourth of the way across the north and south axis of the island and is separated from the barren, palm-covered savanna to the south by a ridge of limestone hills, known as Sierra Cubitas. The Cubitas Mountains, as these hills are called by the Americans, were visited and the mouth of a grand cavern in the eastern part afforded an ideal place for camping. The hilltops are clothed with about the same species of trees that comprise the forest of the fertile lowlands but they are stunted and less numerous and one at first wonders how any plants could grow on this perforated rock. Epiphytes were less numerous but bromeliads were sufficiently abundant to be used as fodder for our horses in the total absence of suitable grasses. Several depressions, called passes, which in the rainy season are water-courses, are especially interesting, being rich in ferns, peperomias, and various other shade-loving plants.

"One of the objects of this expedition was to ascertain whether the flora of northeastern Cuba had any relation to that of the adjoining Bahamas, which islands have been the subject of extensive floristic investigations by Dr. Britton and others; but in the region just described there seems to be little or no relationship.

"Cayo Guajaba, one of the chain of islands already referred to, none of which seem to have been visited by botanists heretofore, probably on account of the difficulty of access, was examined at several points and was found to possess a very different flora from that of the mainland south of it, many of the species being Bahamian. This island is about fifteen miles long, nearly half as wide, of a limestone formation, and rather rough, its hills probably reaching an altitude of two hundred feet. It is uninhabited save by billions of insects and some wild hogs and deer; a drove of wild horses also is said to exist there, as there is considerable grass upon the island.

"Cayo Sabinal, the largest and easternmost of these islands, appears on some maps as a peninsula; at the present time it is separated by a narrow artificial canal, but its southern side is

made up of a series of mangrove islets, which in dry seasons are separated only by salinas. The higher northern portion is of a flat limestone formation, the inner portion covered by a forest of small trees, largely pigeon plum, *Coccolobis laurifolia* Jacq. Poison wood (*Metopium Metopium*) is also very abundant. Interior salinas, which are irregular in outline and of various extent, are usually fringed with *Conocarpus*, much of which is arborescent. Other openings, of red soil, are largely made up of cat's-claw, *Pithecolobium*, and toward the westerly end some very regularly outlined openings, varying from a few feet in diameter to several acres in extent and often containing a pool of fresh water, are occupied almost entirely by large palmettos; still other openings, small but deeper, support pond-apple, *Anona*, which trees, when the water has subsided sufficiently to expose their short thick trunks, are very grotesque in appearance. At a place near the center of the island large numbers of *Fuscræa* were observed in the dense forest; a thick columnar cactus, often twelve feet high and probably a *Cephalocereus*, was frequently seen but never in large numbers. Several species of palm occurred frequently but no royal palms were seen on any of these islands. The Sabinal was reached from Nuevitas, at which headquarters were made for several weeks, with the aid of an open sail boat, in which two- or three-day trips were taken.

"North of Nuevitas, the railroad to Camagüey passes through many miles of barren palm-covered savannas, through which an occasional stream passes, whose winding course can readily be made out by the fringe of green trees, overtopped by the graceful heads of the royal palm. From Camagüey to Holguin, a distance of about one hundred and fifty miles, one passes alternately through stretches of dry savannas, rich dense woods, or fertile pastures.

"Holguin, of historic as well as commercial importance, is a typical Cuban city of the better type. It is situated on a plateau encircled by a series of irregular mountains of eruptive rock, much burnt over, red and barren to look upon, but when they are examined it is found that the gullies and rocky places are clothed with dense masses of low spiny shrubs, in great variety

and unlike most of the things seen in the regions already mentioned. A pretty palm, seen only on these hills, is at times very conspicuous, as is also a columnar cactus ; and an *Agave* often occupies the summits. Singularly enough, the largest of the very few trees met with on these hills was a single specimen of mahogany. The surrounding region for several miles is a rocky savanna or palm barren in which but one species of palm, a *Copernicia*, is very abundant. Many of the shrubs of the mountain-sides occur here also and the frequent springs, rich swales, and resultant streamlets are occupied or surrounded by groups of trees, shrubs, and some herbaceous plants not seen elsewhere ; these pass on and join broader river valleys, covered with rich woods, royal palm groves or fertile plantations. Flanking these eruptive formations are several series of limestone hills, the intervening valleys being fertile woodland or barren palm-covered savannas.

"Gibara on the coast north of Holguin was visited and the mouth of the bay examined. The flora here as a whole is similar to that of other localities of a like nature, but as in the case of all the others it was found to have some prominent element not seen elsewhere. Here the tall slender stalks of *Papaya Carica* were very peculiar, their small leafy tops high above the surrounding scrub, among which it was sparingly scattered, giving it very much the appearance of tall slender palms noted elsewhere.

"Cacocum and Alto Cedro, stations on the Cuba railway, were given a hurried examination.

"Paoso Estancia, toward Santiago on the Cauto River, was made the last place from which extensive explorations were carried on. The river, which is the largest in Cuba, here passes between high bluffs made up of stratified limestone and clay or sand. It has many turns, with gravelly bars and sandy or muddy banks, and many things can be found here. The surrounding country is a dense forest with a great variety of species ; from here, too, one can see the pine-covered tops of the Sierra Nipe, and an interesting but rough region of some fifteen miles is traversed in getting to them. Much of it is a dense forest of very

large timber ; in all of it is a region in which much of value could be found were sufficient time devoted to it, but my time now was limited and only the Pinales of the mountain tops were given consideration. The pine trees are scattered over a very red earth, said to be good iron ore, and often reach a height of seventy-five feet or more, with trunks two feet in diameter. Among them are a number of peculiar shrubs and a small tree of the huckleberry family, not seen elsewhere. The wiry grass is frequently burnt over, making small herbaceous species, if there were any, seem very scarce.

" Antilla, the new seaport, was reached on the afternoon of the fourth of May, and the next day I crossed to the village of Sartia, situated on the inner east side of the narrow channel to the ocean where a little collecting was done ; the next morning both sides of the channel were explored for some distance around the ocean end of both shores. On the western shore I was fortunate in finding several specimens of the large tree cactus already secured by Dr. Britton on the south coast of Cuba. One of them was fully twenty-five feet high with an equal spread, its spiny trunk having a diameter of two feet."

After a discussion of Dr. Shafer's paper by Dr. and Mrs. Britton, Dr. Rusby, and others, adjournment followed.

MARSHALL A. HOWE,
Secretary pro tem.

NOTICE FROM THE FIELD COMMITTEE

Members are urged to verify for themselves the times of departure of the trains given in the circular of meetings for July and August. On July 17, when an excursion to Pocantico Hills was held the time of departure was ten minutes earlier than the advertised time, owing to a recent change in the time-table. Members intending to go on the Belmar trip will have to be guided by any change the railroad company may make in the time-table. If there is any change, the party will take the train that leaves as near as possible to the time advertised in the field meeting circular.

NORMAN TAYLOR,
Chairman.